

# Evidenced-based recommendations for the enhancement of sports horse welfare in breeding

---

**Prof. Jane Williams**  
**Lorna Cameron**  
**Janet Forbes**  
**Maria Donovan**  
**Erica Febery**



# Why welfare?



**How we interact with horses is being increasingly questioned**

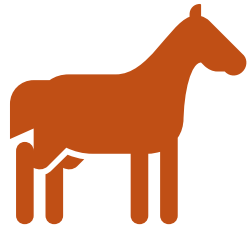
**Equine welfare standards are not adequate - 67% public**

**Improvement needed in equine welfare standards - 78% equestrians**

**We all have responsibility for horses in our care**

**(FEI Equine Ethics & Wellbeing Committee Surveys, 2022)**

# The brief...



---

To identify welfare priorities across the breeding sector and produce guidance for use by WBFSH members

---

---

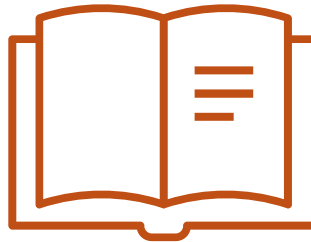
Funded Master's studentship supported by student + alumni input

---

# How did we do it?



**STAGE 1**  
**Interviews**



**STAGE 2**  
**Systematic  
reviews**

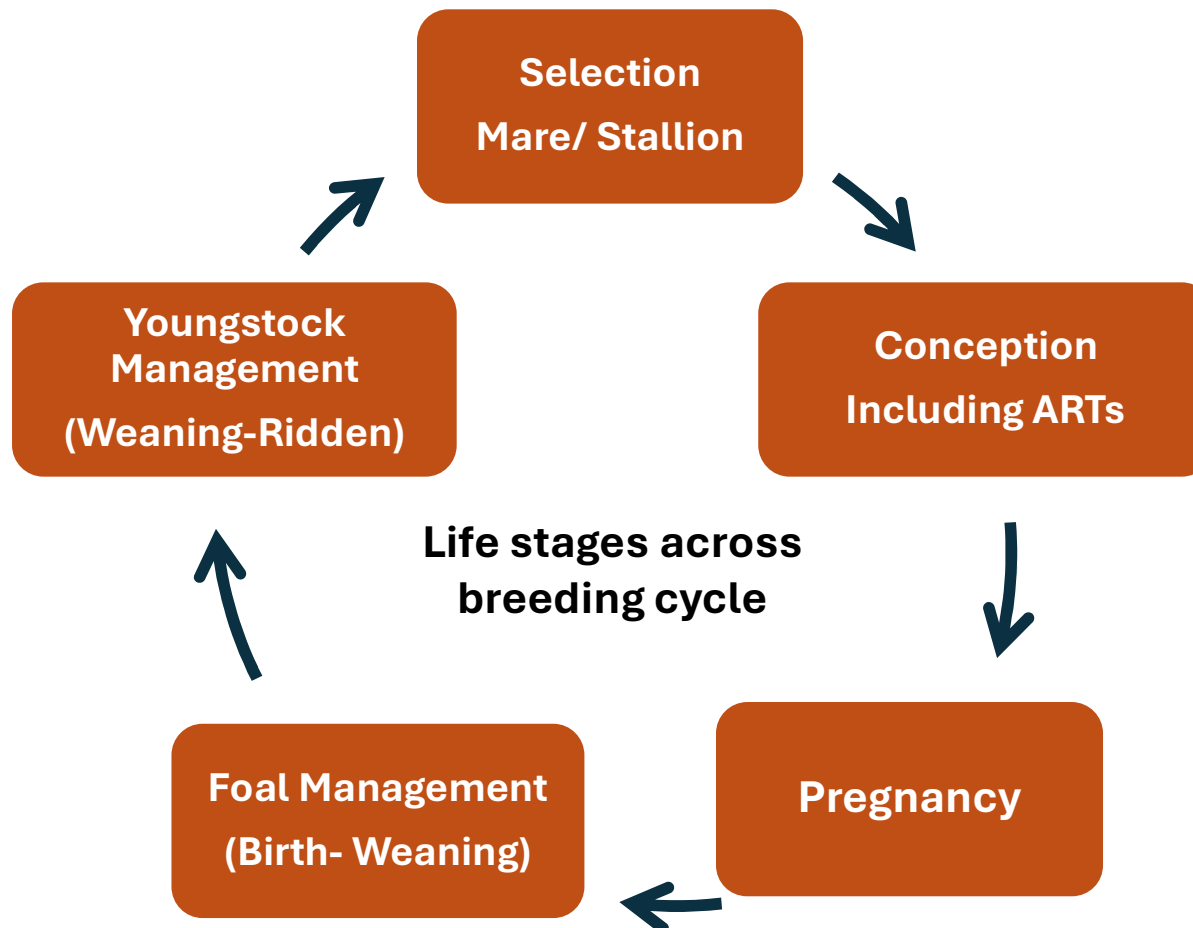


**STAGE 3**  
**Focus groups**

# Methods: Stage 1 – online interviews

17 WBFSH members + industry stakeholders

To identify welfare priorities for SH breeding and welfare definition (breeding cycle)

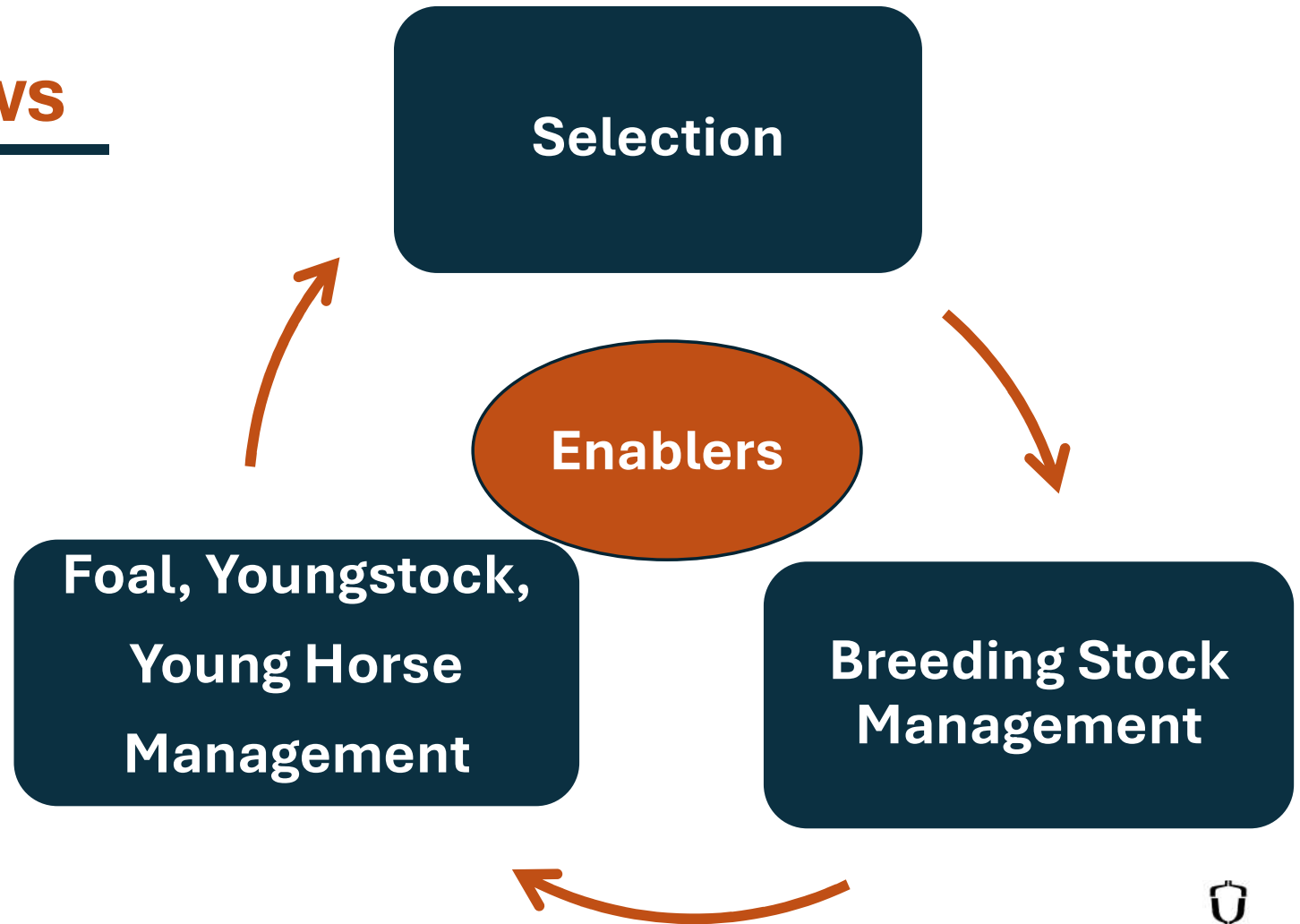


# Results:

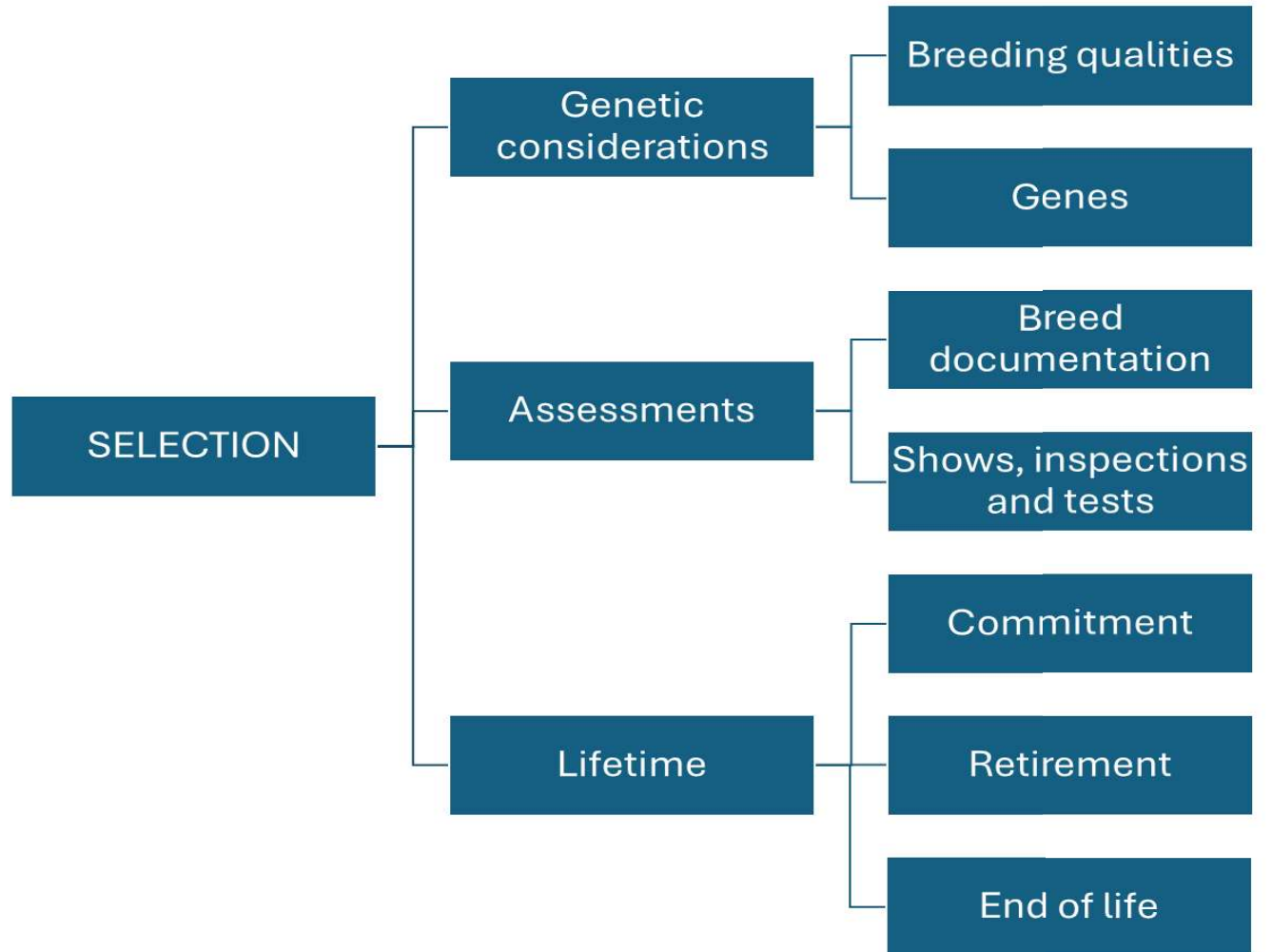
## Stage 1 interviews

---

3 Priority Welfare  
Areas + 4 Enablers

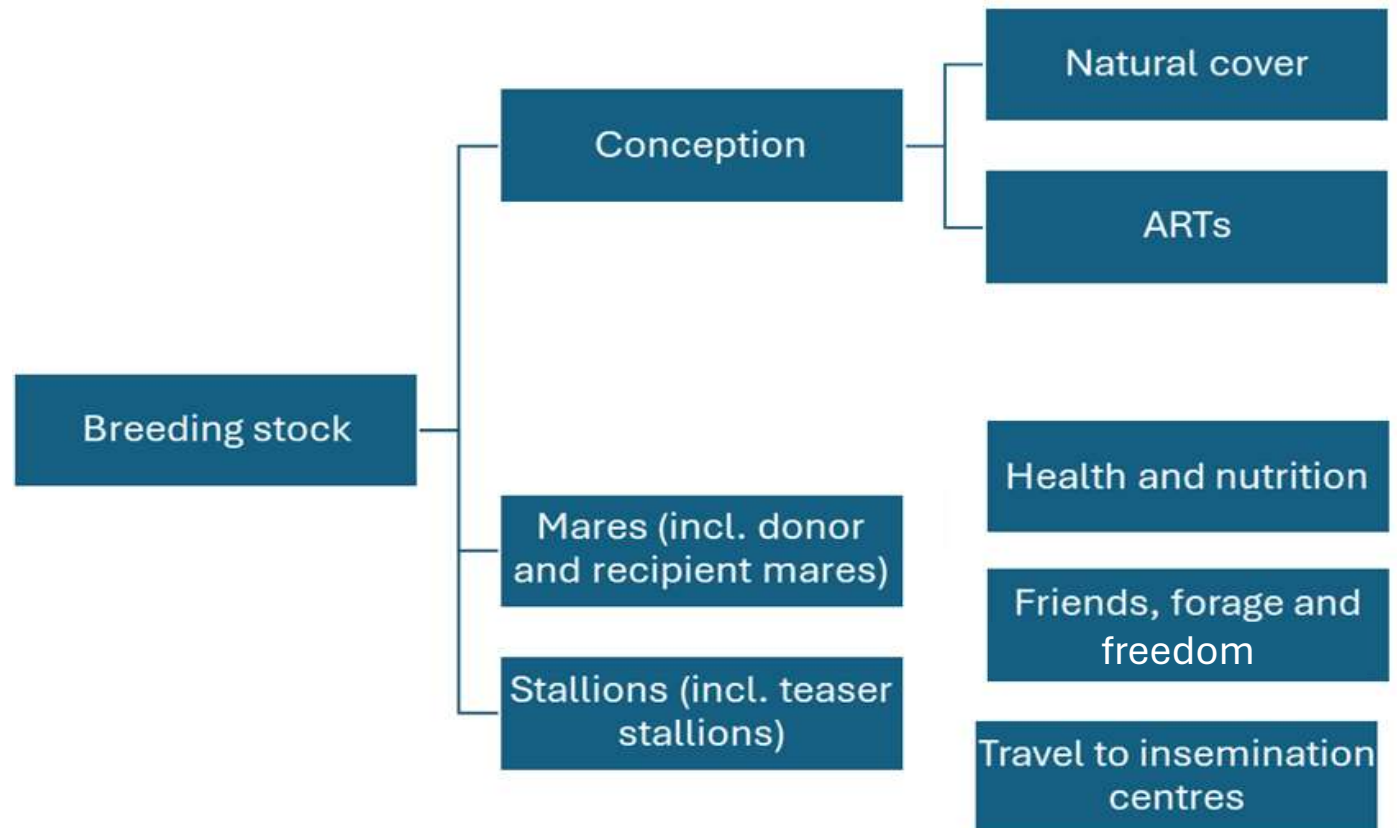


# Selection



# Breeding stock

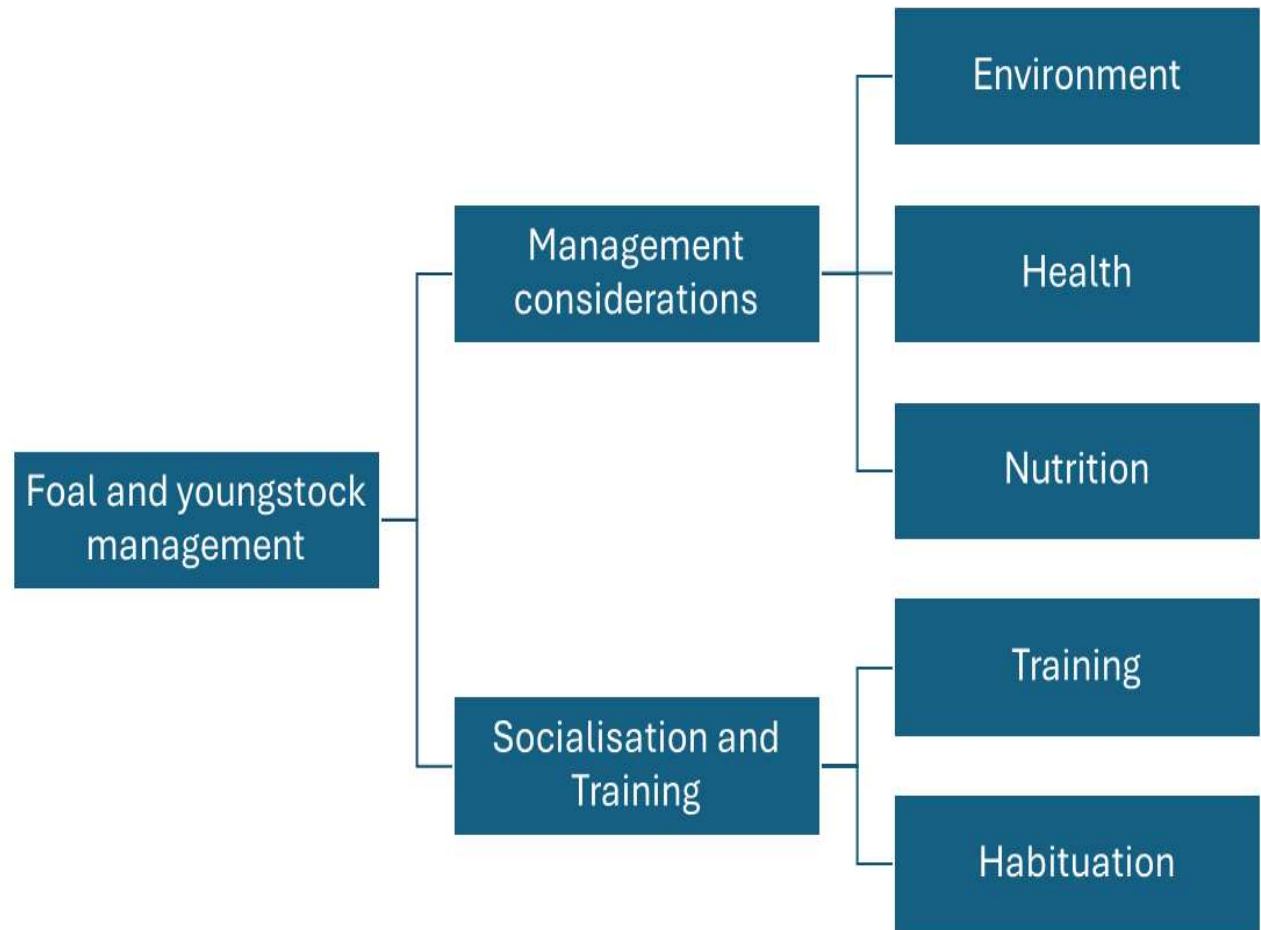
---





# Foal, Youngstock, Young Horse Management

---



# Methods: Stage 2 - Systematic reviews



Extraction of papers focused on 3 welfare priorities from interviews



Cochrane approach applied:

Date range: 2000 – 2024

Databases: PubMed, Wiley, Science Direct, Google Scholar and Google search

Key words from interviews



634 papers screened → 105 papers + 15 guidelines reviewed in depth



Quality appraisal of papers (MacMaster score: 0-100 %) and welfare assessment aligned to Mellor's 5 Domains Model (1: low to 5: high)

# Animal health & welfare: Mellor's Five Domains model (Mellor et al., 2022)

## Nutrition

Water  
Food  
Malnutrition

## Environment

Physical challenge  
Management  
Atmospheric challenge



## Health

Disease  
Injury  
Functional impairment

## Behaviour

Behavioural interactions  
Interactive movement  
Behavioural / movement  
restrictions

Animal + Animal | Human + Animal | Environment Interactions

**Mental State (influenced by other functional states)**

**Negative effects:** *Thirst, hunger, discomfort, illness / disease, anxiety, fear, pain, distress, boredom*

**Positive effects:** *satiety, happiness, health, comfort, relaxation, social, interactive, confident → a good life*

A black and white photograph of several horses galloping through shallow water, creating a dynamic splash. The horses are captured in mid-stride, with their manes and tails flowing. The water is splashing up around their legs, creating a sense of motion and energy. The background is a solid, light gray, which makes the dark horses and the white water splashes stand out.

# Systematic Review Results: The Headlines!



# Health rather than welfare

Integrated welfare assessment → inform actions  
Before - During – After | Spotlight on individual horse



**PHYSICAL HEALTH**



**PSYCHOLOGICAL HEALTH**  
Emotions | Affective State  
How the horse is feeling/  
coping with the  
environment



**AVOIDING ASSUMPTIONS**  
‘Well managed’

Plan → Assess → Revisit  
Horse’s perspective



# Nutrition

Diets focused for  
performance

Restricted diets may limit  
expression of natural  
behaviours



**Balanced / appropriate for age / life stage / individual**



**Consider performance & welfare, do not aim for rapid growth**



**Forage based diet that promotes natural foraging behaviours and choice**



**Maximise time in paddocks / free exercise for foraging, freedom & reduce boredom**



**Ad lib forage at weaning / post weaning**

# Health

Health prioritised

Mare age, BCS, pregnancy history can  $\pm$  influence outcomes

Focus on efficiency & performance rather than impact on horse (e.g. ARTs, natural covering)



**Embed focus on individual horses & how practice affects them, short & long term**



**Assess & justify selection of mares**



**Acclimatise horses to breeding practices**



**Assess impact & justify breeding practices (approach / frequency)**



**Use qualified, experienced staff / handlers (with a welfare lens)**

# Health

Repeated YH grading does not link to improved outcomes

↑ Inbreeding ↓ fertility

Selection should consider soundness, MSK health, longevity

Abrupt weaning can be detrimental to mares / foals



Evaluate need for repeated grading in YHs



Prepare / train YH's for new experiences/ challenges



Focus selection on wider range of attributes in breeding strategies



Monitor genetics indicators of health / longevity & inbreeding across studbooks



Adopt progressive weaning, in mixed age groups if possible





# Environment

Friends, forage & freedom  
can be limited

Management systems  
focused on health &  
tradition



Consider horses' physical & mental needs  
(ARTs | Handling | Travel | Natural Covering)



Familiarise horses to environments &  
practice



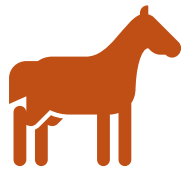
Provide friends, forage, freedom



Train & manage YHs (including Stallions)  
to live in suitable social groups



Allow choice & space to prevent  
competition & increase enrichment



# Behaviour

Limited focus on horses' affective state & behaviour

Limited focus on behaviour in management & training



**Regularly assess horse behaviour**



**Train to prepare / familiarise horses for environments / procedures**



**Stop, revise approach if horses demonstrate adverse behaviours, pain or distress**



**Monitor horses' affective states (feelings / emotions / moods)**



**Engage in positive horse-human interactions to build trust**



**Provide opportunities to exhibit natural behaviours**



**Use ethical training methods suitable for the age, life stage & the individual horse**

# To make this happen: **Enablers**

---

**EDUCATION:** interpreting horse behaviour indicators, welfare assessment, ethical training

---

Generate **EVIDENCE**, target & fund research to inform human behaviour change

---

**ETHICAL** approach across breeding practice and stock management using first principles to arrive at logical / defensible decisions

---

**EXECUTION:** Pragmatic, economical and sustainable approach

# Methods: Stage 3 - Focus groups



6 academic + industry  
global 'experts' in  
equine welfare



2 online focus groups:  
duration 60 and 90  
minutes



Sanity check / review of  
results to broader  
welfare context /  
research



Sounding board for  
dissemination methods

# Focus Group Feedback

---

- **Keep it simple** as a starting point aligned to Mellor's 5 Domain's Model
- Agree a **contextualised welfare definition** for WBFSH that supports a good life for horses
- Generate **core welfare principles** & establish **WBFSH values** to set context
- **Translation strategy**: To provide examples / scenarios for how principles can be achieved practically



# Welfare definition

The WBFSH is committed to ensuring the welfare of horses involved in breeding, as well as those produced through breeding by adhering to ethical, evidence-informed and responsible breeding practices, management and care that provide horses with a good life.



**Welfare  
principle #1**

**In all circumstances consider and prioritise the welfare of individual horses**



**NUTRITION**

Balanced | Appropriate diet  
Individual | Age | Life stage



**HEALTH**

Performance + Welfare



**ENVIRONMENT**

Provide choice | Reduce  
competition | Increase  
enrichment



**BEHAVIOUR**

Monitor horses, stop,  
revise approach if adverse  
behaviour | pain | distress



Evidence and ethically informed decision making  
Ethical approach to management & practice



**Positive mental state → A GOOD LIFE**

**Welfare  
principle #2**

**Promote indicators of health, welfare & longevity as well as performance into breeding strategies, breeding stock selection & grading**



**NUTRITION**

Balanced | Appropriate diet  
Individual | Age | Life stage



**HEALTH**

Select breeding stock for  
health, welfare & longevity



**ENVIRONMENT**

Genetic evaluation of  
inbreeding coefficients /  
relative breeding values



**BEHAVIOUR**

Select for performance  
& welfare



Evidence and ethically informed decision making  
Breeding strategies within / across breeds that  
promote genetic diversity & longevity



**Positive mental state → A GOOD LIFE**



Welfare  
principle #3

# Prepare horses for breeding practices through ethical, evidence informed & age-appropriate training



## NUTRITION

Appropriate body condition  
score | management



## HEALTH

Assess horse welfare  
across training



## ENVIRONMENT

Prepare & train horses for new  
experiences / challenges  
(using learning theory)



## BEHAVIOUR

Focus on individual  
Stop & revise approach if  
horses if distress / pain



Evidence and ethically informed decision making  
Qualified & experienced staff / handlers  
Evidence-informed ethical training approach



**Positive mental state → A GOOD LIFE**

**Welfare  
principle #4**

## Engage in responsible and ethical breeding practices that generate a sustainable breeding industry



### NUTRITION

Balanced | Appropriate diet  
Individual | Age | Life stage



### HEALTH

Select for health & welfare  
Assess welfare during ARTs



### ENVIRONMENT

Provide choice & space to  
reduce competition &  
increase enrichment



### BEHAVIOUR

Friends | Forage | Freedom  
Ethical training



Evidence-informed ethical management & practice  
Train / manage horses to live in suitable social groups  
Qualified & experienced staff / handlers



**Positive mental state → A GOOD LIFE**

**Welfare  
principle #5**

**Engage in effective & informed health & welfare assessment  
of individual horses to support robust decision making  
across breeding practices & management of breeding stock**



**NUTRITION**

Balanced | Appropriate diet  
& Body condition score



**HEALTH**

Select appropriate stock  
(age, health, history)  
Monitor horse welfare



**ENVIRONMENT**

Provide opportunities to  
exhibit natural behaviours  
Friends | Forage | Freedom



**BEHAVIOUR**

Evaluate behaviour  
Manage pain  
Familiarise to practice



Evidence-informed ethical management & practice  
Qualified / experienced staff / handlers  
Engage in positive horse-human interactions



**Positive mental state → A GOOD LIFE**

**Welfare  
principle #6**

**Meet individual horses' needs: Provide horses with friends, forage, & freedom to facilitate function without force by providing mares, stallions & young horses with choice**



**NUTRITION**

Sufficient quality, quantity  
& choice of forage & water



**HEALTH**

Welfare-informed  
decision making



**ENVIRONMENT**

Maximise time in paddocks  
Promote stable herd  
structures



**BEHAVIOUR**

Opportunities for  
socialisation  
Choice



Qualified & experienced staff / handlers  
Evidence-informed ethical training and management  
appropriate for age | life stage | individual



**Positive mental state → A GOOD LIFE**

Welfare  
principle #7

**Provide appropriate nutritional plans for individual horses' life stage & management to optimise welfare & that do not solely prioritise production outputs**



**NUTRITION**

Individual &  
welfare focus



**HEALTH**

Balanced | Appropriate diet  
Individual | Age | Life stage |  
Management system



**ENVIRONMENT**

Provide choice | Sufficient  
quality & quantity of forage  
and access to paddocks



**BEHAVIOUR**

Provide opportunities to  
exhibit natural behaviours  
Friends | Forage | Freedom



Evidence-informed ethical management & practice  
Qualified / experienced staff / handlers  
Welfare-informed decision making & interactions



**Positive mental state → A GOOD LIFE**

**Welfare  
principle #8**

## Promote progressive weaning approaches to optimise the welfare of foals and mares



### NUTRITION

Balanced | Appropriate diet  
Access to ad lib forage  
Individual | Age | Life stage



### HEALTH

Health & welfare informed  
decision making



### ENVIRONMENT

Provide choice | Sufficient  
quality & quantity of forage  
and access to paddocks



### BEHAVIOUR

Opportunities for  
socialisation in mixed age  
groups & choice



Evidence-informed ethical management & practice  
Qualified / experienced staff / handlers  
Engage in positive horse-human | horse-horse interactions



**Positive mental state → A GOOD LIFE**

**Welfare  
principle #9**

**Provide horses with a foundation for a good life  
through evidence based early handling & training of  
youngstock / young horses**



**NUTRITION**

Balanced | Appropriate diet  
Individual | Age | Life stage  
Performance + Welfare



**HEALTH**

Health & Welfare informed  
decision making &  
interactions



**ENVIRONMENT**

Prepare horses for new  
challenges / experiences



**BEHAVIOUR**

Monitor horses, stop,  
revise approach if adverse  
behaviour | pain | distress



Confident, educated & experienced handlers / staff  
Evidence-informed ethical training and management  
appropriate for age | life stage | individual



**Positive mental state → A GOOD LIFE**

**Welfare  
principle #10**

# Commit to ethical and informed lifelong care of breeding stock including effective retirement & end of life planning



## NUTRITION

Balanced | Appropriate diet  
Individual | Age | Life stage



## HEALTH

Recognition of when to  
retire based on welfare not  
commercial value



## ENVIRONMENT

Provide opportunities to  
exhibit natural behaviours  
Friends | Forage | Freedom



## BEHAVIOUR

Evaluate behaviour → QoL  
Euthanasia as a welfare  
option



Welfare & ethically informed decision-making  
End of life planning: Implement retirement plans  
Evidence-informed ethical management & practice



**Positive mental state → A GOOD LIFE**



# WBFSH Values – what should they be, a starter for 10!

---



## **Respect horses**

*Prioritise individual horses' needs*



## **Provide horses with a good life**

*Give equal consideration to the physical health and mental wellbeing of horses*



## **Prioritise horse welfare**

*Promote horse's lived experience by providing opportunities to express natural behaviours and choice*



## **Be solution driven**

*Engage in ethical and evidence-informed, pragmatic, responsible and sustainable solutions to individual and global challenges in the breeding sector*



**Be trustworthy through transparency & accountability**  
*Engage in ethical and evidence-based decision making informed by regular horse welfare assessment*



## **Be committed to evolve**

*Be innovative, be curious and keep learning to continue to evolve for a responsible and sustainable breeding industry*

# Practical translation: A simplified example

***In all circumstances consider & prioritise the welfare of individual horses***

Welfare Principle #1	NEGATIVE (Not good enough)	NEUTRAL (Acceptable but could be better)	POSITIVE (Promoting a good life)
Provide more time at pasture to promote natural foraging behaviours	No access to pasture Small amount of time at pasture	Equal lengths of time pasture and in stables.	More time spent at pasture than in stables

# Recommendations

---

**To integrate welfare into the WBFSH statutes**

---

**To influence policy and practice as a thought leader to prioritise equine welfare as a key consideration across all aspects of the breeding industry**

---

**To support (commission / fund) targeted research to generate evidence that can inform and advance equine welfare in the breeding sector to promote responsible breeding**

---

**Empower breeding professionals through evidence informed education and CPD that promotes a good life for horses**

---

**Translate research into best practice guides / case studies to inform welfare friendly management of horses and breeding practices**

---

## Research priority areas

- Evaluating horse welfare – across breeding contexts including within wider research related to breeding
- Impact of natural covering on equine welfare (teaser stallions / stallions / mares)
- Pre/peri/post-natal influences including mare breeding history on offspring health (especially musculoskeletal health) and longevity
- Impact of implementation of ARTs on equine welfare: short- & long-term outcomes
- Impact of ARTs on genetic diversity / fertility / fecundity within / across breeds
- Impact of horse-human interaction on youngstock
- Appropriate age & approaches for YH grading tests

## Education / CPD / best practice priority areas

- Welfare assessment / effective welfare management → good life 'guides' for horses involved in breeding / young stock
- Interpretation of equine behaviour including evaluation of emotional state and pain and effective pain management
- Ethical training – learning theory (ISES First Principles) across different contexts: handling, ARTs
- Evidence informed decision making
- Preparing horses for new environments / procedures (training / habituation / welfare assessment)
- Management to promote a good life for horses
- Young horse management
- Retirement / end of life planning

**Next  
steps...**

---





# A final thought: We all have a duty of care and are all responsible for horse welfare

---

Industry leaders, federations, studbooks

---

Professionals, breeders, producers, vets etc

---

Influencers and role models

---

Horse owners, riders, friends, yards

---

Media and Social Media

---

**All of us!**



Reproduced by kind permission  
from Jean Abernathy© Fergus™



# Thank you

## Any questions?

[Jane.Williams@Hartpury.ac.uk](mailto:Jane.Williams@Hartpury.ac.uk)



Scan to find out more  
about our research

